



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,882	12/10/2003	Clifford Charles Bampton	67397-011PUS2	6951

54549 7590 12/19/2008
CARLSON, GASKEY & OLDS/PRATT & WHITNEY
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER

IP, SIKYIN

ART UNIT	PAPER NUMBER
----------	--------------

1793

MAIL DATE	DELIVERY MODE
-----------	---------------

12/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/732,882
Filing Date: December 10, 2003
Appellant(s): BAMPTON ET AL.

Matthew L. Koziarz
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 30, 2008 appealing from the Office action mailed November 01, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The amendment after final rejection filed on February 26, 2008 has been entered.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,972,070	KONDOH	10-1999
5,004,581	TAKAGI	04-1991

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 20 and 47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The limitations “up to about 7 weight percent” in claims 20 and 47 does not have literal support from specification as originally filed. The

Regarding the Office Communication of 11 July 2007, support for the amendment “up to about 7 weight percent” in claim 20 can be found in the subject application on page 5, lines 17-19; page 11, Table I; and page 13, Table H. ~~Further, new claim 47 is presented and recites a~~ “relied upon by appellants

does not support the range from zero to less than 0.5 wt.%.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Appellant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 18-34, and 43-47 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5972070 to Kondoh et al.

Claims 1-3, 18-34, and 43-46 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5004581 to Takagi et al (reference from parent application).

Takagi discloses the features including the claimed composite composition (col. 3, line 25 to col. 4, line 25), application of the composition as internal combustion engine valve (paragraph bridging col. 2 and 3), dispersed hard particle size and area ratio (col. 5, lines 29-36). The area ratio recited by Takagi reads on the claimed volume ratio and recited in instant claims 25 and 33.

Kondoh discloses the features including the claimed composite composition (col. 3, lines 14 to 55), application of the composite composition as friction material (col. 3, lines 14-20), dispersed hard particle size and area ratio (col. 4, lines 17-22). The weight ratio recited by Kondoh overlaps the claimed volume ratio and recited in instant claims 25 and 33.

With respect to claim 26, that the area/volume of hard particles can be increased or decreased based on need of wear resistance, which is contemplated within ambit of

Art Unit: 1793

ordinary skill artisan. Therefore, when prior art compounds essentially "bracketing" the claimed compounds in structural similarity are all known, one of ordinary skill in the art would clearly be motivated to make those claimed compounds in searching for new products in the expectation that compounds similar in structure will have similar properties. In re Gyurik, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979); See In re May, 574 F.2d 1082, 1094, 197 USPQ 601, 611 (CCPA 1978) and In re Hoch, 57 CCPA 1292, 1296, 428 F.2d 1341, 1344, 166 USPQ 406, 409 (1970). As stated in In re Peterson, 315 F.3d 1325, 1329-30, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003), that "A prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art". Therefore, it would have been obvious to one of ordinary skill in the art to select any portion of range, including the claimed range, from the broader range disclosed in a prior art reference because the prior art reference finds that the prior art composition in the entire disclosed range has a suitable utility. Also see MPEP § 2131.03 and § 2123.

With respect to instant claims 21 and 23 that the cited references do not disclose hard particles are equiaxial. Therefore, first dimension would be different from second dimension. The limitation recited in instant claim 23 reads on overlay as taught by Takagi.

With respect to the burn resistant pressure property as recited in instant claim 27 that the instant claimed metal composite compositions are overlapped by the cited reference; consequently, the properties as recited in the instant claims would have inherently possessed by the teachings of the cited references. Therefore, the burden is

Art Unit: 1793

on the appellant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product.

In re Best, 195 USPQ, 430 and MPEP § 2112.01.

“Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound basis for believing that the products of the appellant and the prior art are the same, the appellant has the burden of showing that they are not.’ In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977).”

Claims 18-34 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5114468 to Akutsu et al (from parent application).

Akutsu discloses the features including the claimed composite composition (col. 1, lines 50-68), application of the composition as internal combustion engine valve (col. 1, lines 12-15), dispersed hard particle size and area ratio (col. 1, lines 65-68). The area ratio recited by Akutsu overlaps the claimed volume ratio and recited in instant claims 25 and 33. Akutsu does not disclose the burn resistant pressure property. However, the instant claimed metal composite compositions are overlapped by the cited references; consequently, the properties as recited in the instant claims would have inherently possessed by the teachings of the cited references. Therefore, the burden is on the appellant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product.

In re Best, 195 USPQ, 430 and MPEP § 2112.01.

Art Unit: 1793

“Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound basis for believing that the products of the appellant and the prior art are the same, the appellant has the burden of showing that they are not.’ In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977).”

(10) Response to Argument

Appellant's arguments filed September 30, 2008 have been fully considered but they are not persuasive.

Compositions in appealed independent claims and cited references are listed in table below:

Wt. %	Claim 1	Claim 18	Claim 43	Claim 47	USP581 Takagi c.3,l. 25-68	USP070 Kondoh c.2-3	USP468 Akutsu c.1 l. 50-58 for claims 18-34
Al	2.5-6	2-6	2.5-6	2.5-6	0.1-5	0.1-5	0.3-6
Ni	30-50	---	30-50	30-50	5-30	5-40	1-5
Zn	3-30	15-45	3-30	3-30	3-30	5-40	10-40
Reinforcing agent	---	yes	yes	yes	yes	yes	yes
Si				<=7	1-5	1-5	0.1-3
Cr				<=7	0.1-10		
Ti				<=7	0.1-5		

Art Unit: 1793

Metal	---	---	---	yes	yes	yes	yes
Oxide/carbide							
Cu	bal	bal	bal	bal	bal	bal	bal

Various ceramic reinforcement materials may include alumina, silicon carbide,

Note: and the like. {0018}

(instant specification [0018]).

~~possession of the claimed limitation. For instance,~~ the application discloses the range of 2-7wt% (see page 5, lines 17-19). The application also discloses other examples having 1wt% and 0.5wt% of the claimed elements (see page 11, Table I; and page 13, Table II). Therefore, one of ordinary skill in the art could reasonably conclude possession of the claimed range of "up to

Appellants argue that "about 7 weight percent." " But,

"up to about 7 weight percent" includes "0 to less than 0.5 weight percent" which is nowhere supported by the specification as originally filed.

The Examiner also noted in the Advisory Action that there is no literal support for the range from 0-0.5wt%. However, the application discloses some compositions that do not include any silicon, chromium, or titanium (see page 13, Table II). Therefore, the specific examples disclosing 2-7wt%, 1wt%, 0.5wt%, and 0wt% of silicon, chromium, or titanium support the

Appellants argue that " claimed range of up to 7wt%. The rejection should therefore be withdrawn. " If

appellants intend to exclude unrecited elements, appellants should use "consisting of" transitional expression. Examples are given by way of illustration and not by way of limitation. In re Widmer, 353 F.2d 752, 757, 147 USPQ 518, 523 (CCPA 1965), In re Boe, 148 USPQ 507 (CCPA 1966), and In re Snow, 176 USPQ 328.

lubricity (see, e.g., lines 50-55; col. 9, lines 28-46). Appellant's composition is intended for burn and oxidation resistance, not lubricity and dispersion strengthening. Therefore, the additional elements of Takagi and Kondoh would change the fundamental character of Appellant's

Appellants argue that " composition. "

But, there is no factual evidence that the essential additional elements from said references would have detrimental effect on burn and oxidation resistance of applicant's

Art Unit: 1793

composition. In re De Lajarte, 337 F 2d 870, 143 USPQ 256 (CCPA 1964) and Ex parte Davis, et al., 80 USPQ 448, 450 (PTO Bd. App. 1948).

Appellants' argument with respect to Fe and Pb in paragraph bridging pages 4-5 of instant remarks is noted. But, it is found inconsistent of instant appealed claims which contain Al (in all appealed independent claims) and Ti (in appealed claims 2, 3, 19, 20, 29, 44, 45, and 47, for examples). Fe and Pb have threshold pressures much higher than Al and Ti (see Sinclair article, Table 2, submitted after final rejection below).

104 FLAMMABILITY AND SENSITIVITY OF MATERIALS

Table 2. Threshold pressures of elements, see ASTM G124.

Element	Threshold pressure, lb./sq. in.		Threshold pressure, lb./sq. in.	
	Aluminum	Titanium	Iron	Lead
Aluminum	100	100	100	100
Titanium	100	100	100	100
Iron	100	100	100	100
Lead	100	100	100	100
...

influence burn resistance. Iron (Fe) is not present in the claimed composition. Sinclair suggests that iron (Fe) would negatively influence burn resistance. Therefore, there is a likelihood that

Appellants argue that “adding iron (Fe) to the claimed composition would materially influence burn resistance.”

But, first Fe has much higher threshold pressure than claimed Al and Ti elements (see response and portion of Table 2 in paragraph immediately above). Second, appellants fail to provide factual evidence to substantiate their position that adding iron to claimed composition would materially influence burn resistance.

Appellants separately arguing appealed dependent claim 26 is found not complying 37 CFR 41.37 (c)(1)(v) below:

****>37 CFR 41.37. Appeal brief.**

(c)

(1) The brief shall contain the following items under appropriate headings and in the order indicated in paragraphs (c)(1)(i) through (c)(1)(x) of this section, except that a brief filed by an appellant who is not represented by a registered practitioner need only substantially comply with paragraphs (c)(1)(i) through (c)(1)(iv) and (c)(1)(vii) through (c)(1)(x) of this section:

(v) *Summary of claimed subject matter*. A concise explanation of the subject matter defined in each of the independent claims involved in the appeal, which shall refer to the specification by page and line number, and to the drawing, if any, by reference characters. For each independent claim involved in the appeal and for each dependent claim argued separately under the provisions of paragraph (c)(1)(vii) of this section, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters.

Nonetheless, the claimed about 55 volume percent reinforcing agent (SiC, appealed claim 24 for example, has density 3.2 gm/cc) has about 32.8 wt.% according to calculation¹. Kondoh discloses hard particles 10-30 wt.% (col. 4, lines 17-28, for example). Takagi discloses hard particles area ratio of 2-30% which reads on volume percent (col. 5, lines 29-36, for example).

Appellants' argument with respect to appealed claim 27 in page 6 of instant appeal brief is noted. First, In re Best, 195 USPQ, 430 states

“Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound

¹ Mass is product of density and volume. Mass of reinforcing agent (SiC) equals 3.2 gm/cc x 55 which is about 176 grams. Mass of Cu-Zn equals 8 gm/cc (average of Cu density 8.92 gm/cc and Zn density 7.1 gm/cc) x 45 which is about 360 grams. Weight percent of reinforcing agent (SiC) is about 32.8 wt.% $\{(176 \text{ gm} \times 100\%) / (176 \text{ gm} + 360 \text{ gm})\}$

Art Unit: 1793

basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)." and MPEP § 2112.01.

With respect to the Sinclair article, examiner reiterates the response as set forth above to Sinclair.

Appellants' argument with respect to appealed claim 47 is noted. Appealed claim 47, pasted below, recites "A metal matrix composite ... **consisting of**: a metal matrix and reinforcing fibers ..." But, "a metal matrix **having** ..." is an opening expression. It is parallel to reciting "A diet is consisting of fruit and fish." Claimed fruit comprises pineapple, orange, and grape. An apple is not excluded from fruit because of "A diet is consisting of fruit and fish."

47. A metal matrix composite having a high burn and oxidation resistance, consisting of:
a metal matrix having about 2.5 to about 6 weight percent aluminum, about 30 to about 50 weight percent nickel, about 3 to 30 weight percent zinc, up to about 7 weight percent of at least one element selected from silicon, chromium, titanium, or combinations thereof, and a balance of copper, and
reinforcing fibers within the metal matrix, the reinforcing fibers consisting of at least one material selected from metal oxide, carbide, or combinations thereof.

12

~~characteristics of the composition. In this case, the composition of Akutsu includes oxygen. The~~
 Appellants argue that " ~~oxygen influences wear resistance by forming hard oxides (see col.2, lines 39-45). Appellants~~ " But, instant appealed claim 24, for example, requires alumina (Al₂O₃) as reinforcing agent.

Appellants' arguments with respect to appealed claims 26 and 27 are noted. Examiner reiterates the same responses as set forth above for the same claims.

Art Unit: 1793

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Sikyin Ip/

Primary Examiner, Art Unit 1793

Conferees:

Roy V. King

/Roy King/

Supervisory Patent Examiner, Art Unit 1793

/Gregory L Mills/

Supervisory Patent Examiner, Art Unit 1700

Application/Control Number: 10/732,882
Art Unit: 1793

Page 14

Matthew L. Koziarz

400 W. Maple Road, Ste. 350

Birmingham, MI 48009